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Risk factors for reporting poor cultural competency among patients with diabetes in safety net clinics.

### Permalink

<https://escholarship.org/uc/item/Oct4c0k9>

### Journal

Medical care, 50(9 Suppl 2)

### ISSN

0025-7079

### Authors

Seligman, Hilary K  
Fernandez, Alicia  
Stern, Rachel J  
[et al.](#)

### Publication Date

2012-09-01

### DOI

10.1097/mlr.0b013e3182640adf

Peer reviewed



Published in final edited form as:

*Med Care*. 2012 September ; 50(9 Suppl 2): S56–S61. doi:10.1097/MLR.0b013e3182640adf.

## Risk Factors for Reporting Poor Cultural Competency Among Patients with Diabetes in Safety-Net Clinics

Hilary K. Seligman, MD<sup>1</sup>, Alicia Fernandez, MD<sup>1</sup>, Rachel J. Stern, BS<sup>1</sup>, Robert Weech-Maldonado, PhD<sup>2</sup>, Judy Quan, PhD<sup>1</sup>, and Elizabeth A. Jacobs, MD<sup>3</sup>

<sup>1</sup>Division of General Internal Medicine, University of California, San Francisco

<sup>2</sup>Department of Health Services Administration, University of Alabama, Birmingham

<sup>3</sup>Division of General Medicine and Health Innovation Program, University of Wisconsin, Madison

### Abstract

**Background**—The Consumer Assessment of Healthcare Providers and Systems Cultural Competency (CAHPS-CC) Item Set assesses patient perceptions of aspects of the cultural competence of their health care.

**Objective**—To determine characteristics of patients who identify the care they receive as less culturally competent

**Research Design**—Cross-sectional survey consisting of face-to-face interviews

**Subjects**—Safety-net population of patients with type 2 diabetes (n=600) receiving ongoing primary care

**Measures**—Participants completed the CAHPS-CC and answered questions about their race/ethnicity, gender, age, education, health status, depressive symptoms, insurance coverage, English proficiency, duration of relationship with primary care provider, and co-morbidities.

**Results**—In adjusted models, depressive symptoms were significantly associated with poor cultural competency in the Doctor Communication – Positive Behaviors domain (OR 1.73, 95% CI 1.11, 2.69). African-Americans were less likely than Whites to report poor cultural competence in the Doctor Communication – Positive Behaviors domain (OR 0.52, 0.28–0.97). Participants who reported a longer relationship (≥ 3 years) with their primary care provider were less likely to report poor cultural competence in the Doctor Communication – Health Promotion (OR 0.35, 0.21–0.60) and Trust domains (OR 0.4, 0.24–0.67), while participants with lower educational attainment were less likely to report poor cultural competence in the Trust domain (OR 0.51, 0.30–0.86). Overall, however, sociodemographic and clinical differences in reports of poor cultural competence were insignificant or inconsistent across the various domains of cultural competence examined.

**Conclusions**—Cultural competence interventions in safety-net settings should be implemented across populations, rather than being narrowly focused on specific sociodemographic or clinical groups.

### Introduction

Culturally competent care is increasingly recognized as a critical component of high-quality and cost-effective health care in the US. The National Quality Forum defines the provision of culturally competent care as care that is “safe, patient and family centered, evidence

based, and equitable” for diverse populations.(1) Accurate and broad-scale measurement of cultural competency from the patient’s perspective may help focus cultural competency interventions and elucidate how a lack of organizational and provider cultural competency contributes to disparities in health care. However, the measurement of this construct has been limited by the lack of valid, reliable cultural competency measurement tools.

A rigorously evaluated and valid tool was recently developed as an extension to the Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey to allow for widespread measurement of cultural competency. This tool, the Consumer Assessment of Healthcare Providers and Systems Cultural Competency Item Set (CAHPS—CC), assesses multiple aspects of care thought to be related to cultural competency. Our goal was to evaluate the extent to which patients’ reports of poor cultural competency, as assessed by three CAHPS—CC domains, are associated with sociodemographic and clinical characteristics. We chose to examine the Doctor Communication – Positive Behaviors, Doctor Communication – Health Promotion, and Trust domains because these domains had acceptable psychometric properties in our participant sample based on the authors’ previous work.(2) The Doctor Communication – Positive Behaviors and Doctor Communication – Health Promotion domains measure aspects of patient-provider communication. Items in the Doctor Communication – Positive Behaviors domain ask patients the extent to which their provider exhibited various aspects of good communication, including explaining things in a way that is easy to understand, listening carefully, spending adequate time with you, and showing respect. Items in the Doctor Communication – Health Promotion domain ask patients the extent to which their provider discussed with them various aspects of health and wellness, including healthy diet, physical activity, and depression. Effective communication between patient and provider is a critical component of providing high-quality and culturally competent care, and previous work has shown that some vulnerable populations (including racial/ethnic minorities and populations with low education, low literacy, or low income) are less likely to report their providers communicate with them effectively.(3)

Like effective patient-provider communication, patient trust in their provider is also thought to be a critical component of culturally competent care. Patients who trust their providers demonstrate greater adherence to treatment plans and report greater satisfaction with their health care. Racial/ethnic minorities are less likely than Whites to report they trust the health care system.(4) The Trust domain includes items which ask patients to report the extent to which they feel they can tell their provider anything, trust their provider with their medical care, and feel their provider tells the truth about their health. It also asks patients how much their provider really cares about them as a person and their health.

Our focus was on determining which sociodemographic and clinical characteristics are associated with poor cultural competency, because these are the groups to which clinical or policy interventions might be appropriately targeted. We chose diabetes as a disease model because patients with diabetes generally have repeated and ongoing contact with the health care system, and because effective patient-provider communication, one important aspect of cultural competency, is essential to high-quality diabetes care.(5–7) This communication often revolves around ongoing medication adherence, diet, and exercise, each of which are highly influenced by culture. There is therefore great opportunity for poor cultural competency to reduce the quality of diabetes care.

## Methods

### Study design and participants

We conducted a cross-sectional survey among patients recruited from academic and non-academic hospital- and community-based safety-net clinics in Chicago and the San

San Francisco Bay Area. Clinics were staffed by a mixture of attending physicians, resident physicians in training, and non-academic physicians and mid-level providers. Patients were recruited into the study to allow for adequate representation of African-American, White, and Mexican-American patients whose primary language was either English or Spanish. Of those approached, 91% (n=711) agreed to participate. Inclusion criteria included age  $\geq$  18 years, a diagnosis of type 2 diabetes, and fluency in English or Spanish. Exclusion criteria included active substance use, cognitive impairment, or psychosis severe enough to preclude survey participation. Because the measurement of cultural competency includes evaluation of a primary care provider, we analyzed data only for participants who reported having a regular primary care provider (n=600).

After participants provided informed consent in English or Spanish, they participated in a face-to-face standardized interview with a trained, bilingual, and bicultural research assistant. The Institutional Review Boards of the participating institutions in Chicago and the San Francisco Bay Area approved all study activities.

## Design and Measures

We used CAHPS-CC to determine participant perceptions of the cultural competency of their usual health care provider. Details of the development of CAHPS—CC can be found elsewhere.<sup>(4)</sup> We present the three CAHPS-CC domains that were psychometrically sound among both English and Spanish speakers in our participant population.<sup>(2)</sup> These domains include Doctor Communication - Positive Behaviors (5 items), Doctor Communication - Health Promotion (4 items), and Trust (5 items).

Responses to the fourteen items in the three domains were transformed to a 0 to 100 scale (Supplementary Appendix), with a score of 100 representing the most culturally competent response for each item. We derived a domain score by calculating the mean of all items in the domain; therefore, a domain score of 100 indicates no responses on any item in the domain consistent with poor cultural competence. If participants skipped or declined to answer some items in the domain, we calculated the domain score as the mean of the answered items (rather than the mean of all items). There were few non-respondents (<1% of the sample) for all items except one item in the Doctor Communication: Positive Behaviors domain (19%, see Supplementary Appendix). Because scores in each of the domains were highly positively skewed, a known phenomenon in patient assessments of provider quality, we arranged scores into quartiles.<sup>(8)</sup> We refer to domain scores in the lowest quartile as “poor cultural competency”.

We identified potential risk factors for poor cultural competency from the communication and patient satisfaction literature and our personal experience working in safety-net institutions. Potential risk factors included race/ethnicity (African-American, White, or Mexican-American), gender, age (18–34, 35–64 or 65+ years), educational attainment (<high school degree), self-reported health status (fair, poor, or very poor vs good, very good, or excellent), depressive symptoms, insurance coverage (Medicare with or without additional Medicaid coverage, Medicaid only, privately insured, or uninsured), English proficiency, length of relationship with provider (<1 year, 1–2 years, 3 years or more), and self-reported co-morbidity burden.<sup>(9–12)</sup>

We determined depressive symptoms using the Patient Health Questionnaire (PHQ-9).<sup>(13)</sup> This nine-item scale is based directly on the diagnostic criteria for major depressive disorder in the Diagnostic and Statistical Manual Fourth edition (DSM-IV). It asks respondents how often over the previous two weeks they have been bothered by each of the nine symptom clusters identified in the DSM-IV. Points are accumulated based on symptom frequency. By established convention, we considered scores  $\geq$  10 indicative of clinically significant

depressive symptoms. Scores of 10–14 are often described as minor depression, dysthymia, or a mild case of major depression, while higher scores are often described as moderate to severe cases of major depression. We refer to scores  $\geq 10$  as “depressive symptoms” as the scale does not allow us to determine a definitive diagnosis of depression.

We considered participants to be English proficient if they reported either that English was their primary language, or that English was not their primary language but they spoke English “well” or “very well”.

We included six co-morbidities: heart attack, stroke, cancer (other than skin cancer), high blood pressure, arthritis, and high cholesterol. We summed the number of co-morbidities to determine co-morbidity burden (range 0–6). We describe co-morbidity burden as a continuous variable for regression analyses.

### Statistical Analysis

We used logistic regression analyses to determine whether potential sociodemographic and clinical risk factors were associated with odds of poor cultural competency (domain scores in the lowest quartile). Participants with missing values for one of the sociodemographic variables were excluded from analyses examining that variable only, which represented 0.3% or less of participants in all analyses. We then generated multivariate logistic regression models adjusting for all of our potential risk factors of interest in order to determine which were independently associated with poor cultural competency. We included recruitment site (Chicago or San Francisco) in regression analyses to adjust for clustering. We considered  $p$ -values  $<0.05$  to be statistically significant. All analyses were performed using SAS 9.2 (Cary, North Carolina).

### Results

The sample included a racially and ethnically diverse group of participants with diabetes who were predominantly between the ages of 35 and 64 years (Table 1). Almost half of participants were uninsured. Overall the mean number of co-morbidities reported by participants was 2.26 (SD 1.08, range 0–5). Whites (mean 2.49, SD 1.04) and African-Americans (mean 2.46, SD 1.02) reported the greatest number of co-morbidities, and Mexican-Americans the fewest number of co-morbidities (mean 2.07, SD 1.10,  $p<0.001$ ).

We used unadjusted logistic regression models to explore which sociodemographic and clinical groups reported the lowest cultural competency scores in each of the domains. African-Americans and participants with better health status were significantly less likely to report poor cultural competency in the Doctor Communication – Positive Behaviors domain compared to Whites and participants with poorer health status. Younger participants and participants with depressive symptoms were significantly more likely to report poor cultural competency in the Doctor Communication – Positive Behaviors domain compared to older participants and those without depressive symptoms (Table 2). Participants with a lengthier relationship with their primary care provider were significantly less likely to report poor cultural competency in the Doctor Communication – Health Promotion domain. These participants and participants with less educational attainment were significantly less likely to report poor cultural competency in the Trust domain.

In fully adjusted models including race/ethnicity, gender, age, education, health status, depressive symptoms, insurance coverage, English proficiency, duration of relationship with primary care provider, co-morbidity burden as a continuous variable, and clinic location, depressive symptoms remained significantly associated with being in the lowest quartile of cultural competency in the Doctor Communication - Positive Behaviors domain (Table 3).

African-Americans remained significantly less likely than Whites to report poor cultural competency scores. In the Doctor Communication - Health Promotion domain, only duration of relationship with primary care provider remained significantly associated with cultural competency; participants who had a relationship with their provider of three or more years were less likely than those in a relationship less than a year to report poor cultural competency scores. In the Trust domain, participants with less educational attainment and a longer relationship with their primary care provider were less likely to report poor cultural competency than those with higher educational attainment and a shorter relationship with their health care provider.

## Discussion

In this sample of patients with diabetes receiving care in safety-net outpatient clinics, race/ethnicity, age, educational attainment, self-reported health status, depressive symptoms, and length of relationship with one's primary care provider were significantly associated with specific aspects of culturally competent care. After full adjustment, participants with depressive symptoms were significantly more likely than those without depressive symptoms to report poor cultural competency in the Doctor Communication – Positive Behaviors domain, while African-Americans were significantly less likely than Whites to report poor cultural competency in the Doctor Communication – Positive Behaviors domain. Participants who reported a 3 year or longer relationship with their primary care provider were less likely than those with a briefer relationship with their primary care provider to report poor cultural competence in the Doctor Communication – Health Promotion and Trust domains, while participants with lower educational attainment were less likely than those with higher educational attainment to report poor cultural competence in the Trust domain. Overall, however, sociodemographic and clinical differences in reports of poor cultural competence were insignificant or inconsistent across the various domains of cultural competence. Our data suggests that cultural competence interventions in safety-net settings should be broadly implemented across populations, rather than being narrowly focused on specific sociodemographic or clinical groups.

There may be a number of factors contributing to our surprising finding that African-Americans were less likely than Whites to report poor cultural competency in the Doctor Communication – Positive Behaviors domain. First, all of our patients were recruited from the safety-net setting. Our clinical experience suggests that, compared to Mexican-American and African-American patients, many more White patients seeking care in these settings are homeless, use illicit substances, or have ongoing psychiatric illness. It may be that White patients experience less culturally competent care not because of their race but because of these other co-morbidities. Second, different racial/ethnic groups may have different expectations of their care, and these differences may be reflected in their reports of cultural competency. To the extent that cultural competency is related to patient satisfaction, our results are consistent with research showing that African-Americans sometimes report greater satisfaction than Whites in certain domains of care and practice settings.(9, 14) However, studies focusing more narrowly on domains of cultural competency have been relatively consistent in their finding that Whites report care that is more culturally competent.(15, 16) Further research will be needed to fully understand why Whites reported less culturally competent care in this setting.

Duration of relationship with one's primary care provider was highly associated with cultural competency in the Doctor Communication - Health Promotion and Trust domains. In the safety-net setting from which we recruited, patients with a brief relationship with their primary care provider are more likely to receive care from a resident physician or mid-level health professional. It is therefore unclear from this data whether duration of relationship

with one's provider or provider level of experience is really the important predictor of cultural competency experiences. Although interventions may certainly be targeted toward extending the duration of patient-provider relationships (for example, by preventing discontinuous insurance enrollment), our data may also indicate the importance of focusing cultural competency training efforts on providers with the least clinical experience.

We observed a strong relationship between depressive symptoms and poor cultural competency in the Doctor Communication – Positive Behaviors domain. Studies examining patient satisfaction or perceptions of providers' communication quality have also demonstrated associations with depressive symptoms,(17–21) including among patients with diabetes.(22) Medicare beneficiaries with depressive symptoms are significantly more likely to report worse experiences of care in other CAHPS domains as well.(23) Although there is little research specifically focusing on perceptions of cultural competency among patients with depressive symptoms in the primary care setting, it is plausible that the association we observed between depression and poor cultural competency has multiple mechanisms. First, the manifestations of depression are culturally bound, and therefore providing optimal care to a patient with depression may require a higher level of cultural competency than providing care to a patient with a less culturally bound illness. Second, the perception of poor cultural competence may be a manifestation of the depression itself, i.e. patients with depression are more likely to report all aspects of their care as poor simply because they are depressed. Finally, patients with depression are “often disengaged, unassertive, and poorly informed”,(23) which may limit providers' opportunities for establishing rapport or demonstrating the cultural competence of their care. Based on these hypothetical pathways, it seems reasonable that cultural competency training courses for providers practicing in safety-net settings should specifically address the provision of culturally competent care to patients with depression, and the manifestations of depression in diverse populations. Although it may also seem reasonable to target cultural competency efforts to patients with depressive symptoms, such a narrow focus may miss a large number of patients experiencing less culturally competent care. Finally, improving treatment of depression may change patients' perceptions of the cultural competence of their care. However, we are aware of no studies which specifically test the effects of these kinds of interventions on patient perceptions of cultural competence.

Our results have a number of limitations. Health care providers who are more values-motivated may gravitate toward jobs in safety-net settings, as these settings often present the greatest opportunity to interact with patients of diverse cultural backgrounds.(24) Therefore cultural competence skills of providers in our sample may be higher than cultural competence skills of less highly selected providers. Similarly, practice organization and systems-based health care in the safety-net setting may respond to increased patient diversity with an increased emphasis on providing culturally competent care. Patient perceptions of cultural competence in settings outside the safety-net and large, diverse urban areas may therefore be lower. Patients without diabetes, and particularly those without health conditions that require highly effective and ongoing patient-provider communication, may exhibit different socioeconomic and clinical associations with cultural competence. Finally, we are not able to determine from this data whether perceptions of cultural competency explain any sociodemographic inequalities in health care outcomes.

Although some sociodemographic and clinical sub-groups in the safety-net setting report less culturally competent care, in general differences among groups are inconsistent across various domains of cultural competency. These findings suggest that cultural competency efforts in safety-net settings should be broadly targeted, rather than focusing on specific population subgroups.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

## Acknowledgments

Funds were provided by the Russell Sage Foundation and the Commonwealth Fund.

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**Table 1**

Baseline characteristics of participants (n=600)

	N (%)
<b>Race/Ethnicity</b>	
White	100 (17)
Mexican-American	318 (53)
African-American	182 (30)
<b>Female</b>	303 (51)
<b>Age</b>	
65+ years	113 (19)
35–64 years	460 (77)
18–34 years	27 (5)
<b>Education</b>	
Less than high school degree	237 (40)
<b>English proficient</b>	448 (75)
<b>Health Care Payment</b>	
Private insurance	21 (4)
Medicare ( $\pm$ Medicaid)	191 (32)
Medicaid only	107 (18)
Uninsured	281 (47)
<b>Duration of relationship with primary provider</b>	
3 + years	185 (31)
1–2 years	169 (28)
<1 year	246 (41)
<b>Health status</b>	
Excellent/very good/good (vs fair/poor)	299 (50)
<b>No depressive symptoms (PHQ-9 score <math>\leq</math> 9)</b>	390 (65)
<b>Number of co-morbidities*</b>	
None	31 (5)
1–2	332 (55)
3–4	225 (38)
5–6	12 (2)
<b>Clinic location</b>	
Chicago	312 (52)
San Francisco	288 (48)

\* Self-reported co-morbidities include heart attack, stroke, cancer (other than skin cancer), high blood pressure, arthritis, and high cholesterol.

**Table 2**Sociodemographic correlates of *poor* cultural competency scores (unadjusted), OR (95% CI)

	Doctor Communication - Positive Behaviors	Doctor Communication - Health Promotion	Trust
<b>Race/Ethnicity</b>			
White	Ref	Ref	Ref
Mexican-American	0.82 (0.50, 1.36)	0.94 (0.56, 1.59)	0.88 (0.52, 1.49)
African-American	<b>0.41 (0.22, 0.74)**</b>	0.74 (0.42, 1.33)	0.92 (0.52, 1.64)
<b>Gender</b>			
Female (vs male)	0.77 (0.52, 1.13)	0.91 (0.62, 1.34)	0.9 (0.61, 1.32)
<b>Age</b>			
65+ years	Ref	Ref	Ref
35–64 years	1.73 (0.99, 3.03)	<b>0.62 (0.39, 0.99)*</b>	1.55 (0.91, 2.66)
18–34 years	<b>3.32 (1.30, 8.47)*</b>	0.66 (0.25, 1.79)	1.12 (0.38, 3.34)
<b>Education</b>			
Less than high school degree (vs high school degree/GED)	1.11 (0.75, 1.64)	1.03 (0.70, 1.52)	<b>0.61 (0.40, 0.92)*</b>
<b>Health status</b>			
Good/very good/excellent (vs fair/poor/very poor)	<b>0.58 (0.39, 0.85)**</b>	0.85 (0.58, 1.24)	0.80 (0.54, 1.18)
<b>Depressive sx's</b>	<b>1.97 (1.33, 2.91)***</b>	0.89 (0.59, 1.33)	1.45 (0.98, 2.16)
<b>Insurance</b>			
Medicare	Ref	Ref	Ref
Medicaid only	1.31 (0.74, 2.34)	0.95 (0.55, 1.67)	0.92 (0.51, 1.66)
Uninsured	1.46 (0.93, 2.29)	0.87 (0.56, 1.34)	1.25 (0.81, 1.95)
Private	0.72 (0.20, 2.57)	0.98 (0.34, 2.82)	0.63 (0.18, 2.24)
<b>English proficient</b>			
Yes (vs no)	0.79 (0.51, 1.21)	1.09 (0.70, 1.70)	1.05 (0.67, 1.64)
<b>Duration of PCP relationship</b>			
<1 year	Ref	Ref	Ref
1–2 years	1.07 (0.68, 1.69)	0.71 (0.45, 1.11)	<b>0.61 (0.38, 0.96)*</b>
3 + years	0.76 (0.47, 1.21)	<b>0.37 (0.22, 0.61)****</b>	<b>0.36 (0.22, 0.60)****</b>
<b>Number of co-morbidities</b>	0.9 (0.75, 1.08)	1.09 (0.91, 1.30)	1.03 (0.86, 1.23)
<b>Clinic location</b>			
San Francisco (vs Chicago)	1.13 (0.77, 1.66)	0.90 (0.62, 1.33)	0.70 (0.47, 1.03)

**Note:** Significance level indicated as follows:\*\*\*\*  
p < 0.0001,\*\*\*  
p < 0.001,\*\*  
p < 0.01,

\*  
 $p < 0.05$ .

**Table 3**

Multivariate model of association between sociodemographic characteristics and low scores on CAHPS-CC domains among patients with diabetes receiving care in safety-net clinics, OR (95% CI)

	Doctor Communication - Positive Behaviors	Doctor Communication - Health Promotion	Trust
<b>Race/Ethnicity</b>			
White	Ref	Ref	Ref
Mexican-American	0.82 (0.45, 1.50)	1.01 (0.55, 1.85)	0.93 (0.5, 1.75)
African-American	<b>0.52 (0.28, 0.97)*</b>	0.67 (0.36, 1.24)	1.17 (0.63, 2.16)
<b>Gender</b>			
Female (vs male)	0.75 (0.50, 1.12)	1.00 (0.67, 1.50)	0.94 (0.63, 1.42)
<b>Age</b>			
65+ years	Ref	Ref	Ref
35–64 years	1.36 (0.70, 2.65)	0.56 (0.31, 1.01)	1.5 (0.78, 2.89)
18–34 years	2.23 (0.76, 6.49)	0.54 (0.18, 1.66)	1.03 (0.30, 3.53)
<b>Education</b>			
Less than high school degree (vs high school degree/GED)	1.09 (0.66, 1.80)	1.06 (0.66, 1.72)	<b>0.51 (0.30, 0.86)*</b>
<b>Health status</b>			
Good/very good/excellent (vs fair/poor/very poor)	0.74 (0.48, 1.15)	0.8 (0.52, 1.23)	0.86 (0.56, 1.34)
<b>Depressive sx's</b>	<b>1.73 (1.11, 2.69)*</b>	0.79 (0.50, 1.24)	1.44 (0.92, 2.26)
<b>Insurance</b>			
Medicare	Ref	Ref	Ref
Medicaid only	1.19 (0.63, 2.26)	1.24 (0.66, 2.35)	0.88 (0.46, 1.7)
Uninsured	1.12 (0.64, 1.97)	1.05 (0.59, 1.87)	0.93 (0.53, 1.63)
Private	0.8 (0.21, 3.09)	1.31 (0.42, 4.08)	0.49 (0.13, 1.86)
<b>English proficient</b>	0.88 (0.48, 1.62)	1.31 (0.71, 2.4)	0.56 (0.29, 1.08)
<b>Duration of PCP relationship</b>			
<1 year	Ref	Ref	Ref
1–2 years	1.1 (0.68, 1.77)	0.69 (0.43, 1.09)	0.67 (0.42, 1.08)
3 + years	0.81 (0.49, 1.33)	<b>0.35 (0.21, 0.60)****</b>	<b>0.40 (0.24, 0.67)***</b>
<b>Number of co-morbidities</b>	0.93 (0.77, 1.14)	1.07 (0.88, 1.3)	1.03 (0.84, 1.25)
San Francisco (vs Chicago)	1.01 (0.65, 1.59)	0.92 (0.59, 1.43)	1.5 (0.95, 2.36)

**Note:** Models are adjusted for each of the variables included in the Table. Significance levels:

\*\*\*\*  
p < 0.0001,

\*\*\*  
p < 0.001,

\*\*  
p < 0.01,

\*  
p < 0.05.